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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
ZEWDU, MELESS NMN	
ART UNIT	PAPER NUMBER

2683

4

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/998,442

Applicant(s)

FANTASKE, STEVE

Examiner

Meless N Zewdu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,8-10,12-14,17,18,20 and 21 is/are rejected.
- 7) ☒ Claim(s) 2-7,11,15,16 and 19 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 December 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>3</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

1. This action is the first on the merit of the instant application.
2. Claims 1-21 are pending in this action.

Drawings

Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

the claimed invention is directed to non-statutory subject matter. Claims 20-21 are non-statutory. The claims are not tangibly embodied on a computer readable medium in a manner that the functional relationships of the data structure can be realized.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted prior Art (APA) in view of Hansen (US 6,697,871 B1).

As per claim 20: a data structure facilitating communication over a wireless network, comprising:

a message reads on APA (see page 9, lines 21-24).

a transport layer data segment message reads on APA (see page 9, line 24-page 10, line 14).

datagram comprising a datagram sequence number and a message class indicator reads on APA (see page 9, line 21-page 10, line 3). The sequence is clearly disclosed. Regarding the message class indicator, however, the source port number could be one of the message class indicators (e.g., whether the message belongs to a wireless or wired class of messages). But, the APA does not explicitly teach about a link layer datagram encapsulating the transport layer data segment, as claimed by applicant. However, in a related field of endeavor, Hansen teaches that as information passes down through the layers of the protocol stack, each layer encapsulates the information in the form of a protocol data unit. Furthermore, it also teaches that entries

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in each layer encapsulates prior information with new protocol control information in the protocol data unit (see col. 6, lines 49-57). So, it can be seen that, since the link layer is used for encapsulating the TCP layer data segment, the '871 reference provides a functionally equivalent technique. Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the APA with the teaching of Hansen for the advantage of efficiently coding and decoding protocol messages (see col. 1, lines 8-10). Note: when the references are combined as shown above, the encapsulated message/datagram will include sequence number and a message class indicator disclosed in the APA as discussed above.

As per claim 21: the data structure wherein the transport layer data segment comprises a transport layer header including a source message identifier assigned by the originator of the data segment reads on APA (see page 9, lines 24-29), a destination message identifier assigned by the access server reads on APA (see page 9, lines 28-29), and a radio address uniquely associated with the originator of the data segment reads on APA (page 9, lines 24-27).

Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over APA in view of Otan et al (Otani)(US 6,351,469 B1) and further in view of Packer (US 6,038,216).

As per claim 1: a wireless communication device, comprising:

an antenna configured for communication over a wireless network reads on APA (see page 8, line 27-page 9, line 8).

a data processing system in communication with the antenna, the data processing system including a protocol stack for facilitating communication with a network resource via the wireless network reads on APA (see page 9, lines 10-19). But, the APA does not explicitly teach about the protocol stack comprising an intermediate protocol layer configured for monitoring a transmission of electronic data from the antenna for subsequent reception by the network resource, as claimed by applicant. However, in a related field of endeavor, Otani teaches that an intermediate protocol layer can be provided to monitor message data wherein the message data is exchanged between a transmitting and receiving units (see col. 5, line 50—col. 6, line 14; col. 33, lines 15-35; col. 34, line 43—col. 35, line 15). Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to add an intermediate protocol layer to the above references for the advantage of increasing the speed and quality of data communication services (see col. 1, lines 19-28). But, the APA in view of Otani do not explicitly teach about initiating retransmission of unsuccessfully transmitted ones of the datagrams at a transmission rate based on a running average of acknowledgment times for successfully transmitted ones of the datagrams, as claimed by applicant. However, in a related field of endeavor, Packer teaches about a retransmission mechanism, which is a time out to prompt a retransmission of unacknowledged data wherein the time out is based on a running average of or the round trip time for acknowledgment receipt (see col. 1, line 61—col. 2, line 9). Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the above references for the advantage of

optimizing the efficiency of data transfer while minimizing the risk of data loss (see col. 1, lines 35-37).

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over APA in view of Packer.

As per claim 8: a method of wireless data communication between a wireless communication device and a land-based network resource, the network resource being in communication with an access server over land-based network, the method comprising the steps of:

initiating transmission of electronic message from the wireless communication device to the access server over a wireless network reads on APA (see page 9, lines 21-29).

at the wireless communication device monitoring the successful transmission of the message over the wireless network reads on APA (see page 9, line 24-page 10, line 3).

at the wireless communication device initiating retransmission of unsuccessfully transmitted ones of the message reads on APA (see page 2, lines 12-19). But, the APA does not explicitly teach about a method of retransmitting at rate based on a running average of acknowledgment times for successfully transmitted ones of the messages, as claimed by applicant. However, in a related field of endeavor, Packer teaches about a retransmission mechanism, which is a time out to prompt a retransmission of unacknowledged data wherein the time out is based on a running average of or the round trip time for acknowledgment receipt (see col. 1, line 61-col. 2, line 9). Therefore,

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it would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the APA for the advantage of optimizing the efficiency of data transfer while minimizing the risk of data loss (see col. 1, lines 35-37).

Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over APA in view of Packer as applied to claim 8 above, and further in view of Lin (US 6,393,050 B1).

As per claim 9: the method wherein the retransmission step comprises initiating the retransmission in accordance with a predetermined exponentially increasing retransmission interval, as claimed by applicant. However, in a related field of endeavor, Lin teaches that the process of waiting for progressively longer interval is called "back off". Each time device senses a collision on a subsequent transmit attempt, the time between making a transmission attempt will be increased by a small constant factor, leading to "exponential back off." After a limit is reached, data is simply lost (see col. 2, lines 48-64). Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to use exponentially increasing interval of retransmission/transmission waiting time since doing so is conventional, as described by Lin.

As per claim 10: the method wherein the exponentially increasing retransmission interval has a maximum limit reads on '050 (see col. 2, lines 58-64).

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over APA in view of Otani.

As per claim 12: an access server for facilitating communication between a network resource interfacing with the access server over land based network and a wireless communications device interfacing with the access server over a wireless network, the access server comprising:

a network interface for communicating with the network resource over land based network reads on APA (see page 8, line 28-page 9, line 8). A network interface is inherent to the APA system.

an antenna for communicating with the wireless communications device over the wireless network reads on APA (see page 9, lines 1-8).

a data processing system in communication with the network interface and antenna, the data processing system including a protocol stack comprising a first physical layer for facilitating communication over the wireless network read on APA (see page 9, lines 1-19).

a second physical protocol layer for facilitating communication over the land-based network reads on APA (see page 9, lines 1-19).

mapping message data between the wireless communication device and the network resource reads on APA (see page 9, line 21-page 10, line 3).

an application protocol is inherent to the prior art system (APA), without which no message can be exchanged between the wireless device and the access server. But, the APA does not explicitly teach about an intermediate protocol layer in communication

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with the first physical protocol layer and an application protocol layer, as claimed by applicant. However, in a related field of endeavor, Otani teaches that an intermediate protocol layer can be provided to monitor message data wherein the message data is exchanged between a transmitting and receiving units (see col. 5, line 50—col. 6, line 14; col. 33, lines 15-35; col. 34, line 43—col. 35, line 15). Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to add an intermediate protocol layer to the above references for the advantage of increasing the speed and quality of data communication services (see col. 1, lines 19-28).

As per claim 13: the access server wherein the intermediate protocol layer comprises a message processor configured to initiate transmission over the wireless network of acknowledgment signal to the wireless communications device in response to a successful reception of a wireless message data from the wireless communication device '469 reads on (see col. 5, line 50—col. 6, line 14; col. 33, lines 15-35; col. 34, line 43—col. 35, line 15).

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over APA in view of Otani as applied to claims 12 and 13 above and further in view of Packer.

As per claim 14: the access server wherein the intermediate protocol layer is configured to monitor a transmission of land-based message datagrams directed to the wireless communications device by the network resource and for initiating retransmission of unsuccessfully transmitted ones of the land-based message datagrams reads on '469 (see col. 5, line 50—col. 6, line 14; col. 33, lines 15-35; col. 34, line 43—col. 35, line 15) and, at a retransmission rate based on a running average of

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acknowledgment times for successfully transmitted ones of the land-based message datagrams '216 (see col. 1, line 61-col. 2, line 9). The combination and motivations are same as provided in claims 1 and 12.

Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over APA in view of Renouard et al. (US 6,161,123).

As per claim 17: a method of wireless data communication between at least one land-based network resource and at least one wireless network communications device, the method comprising the steps of:

providing at least one network resource and an access server in communication with the network resource over land-based network for facilitating communication between at least one wireless communication device and the at least one network resource reads on APA (see page 8, line 28-page 9, line 19; page 10, lines 5-14).

at the access server receiving over the wireless network a wireless-based message datagram from the at least one wireless communication device intended for transmission to the at least one network resource reads on APA (see page 9, line 21-page 10, line 3).

directing the successfully received wireless-based message datagram to the at least one network resource over the land-based network reads on APA (see page 2, lines 4-10; page 8, line 28-page 9, line 19). But, the APA does not explicitly teach about an access server initiating transmission over the wireless network of an acknowledgement datagram to the at least one wireless communications device in response to a successful reception of the received wireless-based message datagram,

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as claimed by applicant. However, in a related field of endeavor, Renouard teaches about a data processing system comprising a server and a hand held client device communicating wirelessly (fig. 3) and acknowledging each other for verifying data each receives from the other (see fig. 4; col. 6, line 61-col. 7, line 49, particularly col. 7, lines 34-41). Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the APA with the teaching of Renouard for the advantage of providing reliable communication over an unreliable transport layer is a handheld device (see col. 1, lines 8-11).

Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over APA in view of Renouard as applied to claim 17 above, and further in view of Packer.

As per claim 18: the APA in view of Renouard obviates the method step of at the access server receiving at least one land-based message datagram from one of the network resources intended for transmission to one of the wireless communication devices, as discussed in the rejection of claim 17. But, the APA in view of Renouard do not explicitly teach about monitoring successful transmission of the land-based message datagrams over the wireless network, and initiating retransmission of unsuccessfully transmitted ones of the land-based message datagrams at a transmission rate based on a running average of acknowledgment times for successfully transmitted ones of the land-based messages datagrams, as claimed by applicant. It is to be noted that retransmission, in this context, is a function of monitoring. So, the issue to be addressed is the retransmission rate. However, in a related field of endeavor, Packer teaches about a retransmission mechanism, which is a

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time out to prompt a retransmission of unacknowledged data wherein the time out is based on a running average of or the round trip time for acknowledgment receipt (see col. 1, line 61-col. 2, line 9). Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the APA for the advantage of optimizing the efficiency of data transfer while minimizing the risk of data loss (see col. 1, lines 35-37).

Allowable Subject Matter

Claims 2-7, 11, 15-16 and 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

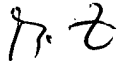
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Meless N Zewdu whose telephone number is (703) 306-5418. The examiner can normally be reached on 8:30 am to 5:00 pm..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Trost can be reached on (703) 308-5318. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Meless Zewdu



Examiner

24 June 2004.



WILLIAM TROST
SUPERVISORY PATENT EXAMINER
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